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TAGS: ENRG ECON HR
SUBJECT: CROATIA ASSESSES HOW TO MEET GROWING ELECTRICITY DEMAND

¶1. Summary: Although Croatia's electricity supply is sufficient for current needs, government and industry are looking at ways to meet increased future demand while complying with various EU energy directives. Plans have already been mooted for new gas and coal-fired thermal plants, as well as hydro and wind facilities to meet a demand for power that is growing by about 3.8 percent annually. Concerns about meeting demand without substantial increases in carbon emissions have even led to calls for investment in nuclear and wind energy. In the electricity market, as with oil and gas, Croatia hopes to position itself as a regional player in the Southeast Europe energy market. End Summary.

INCREASING DEMAND

¶2. Croatian electric company HEP covers 85 percent of domestic power demand from its own sources. The average annual electricity consumption in this country of 4.4 million people is estimated at some 16 terawatt hours (TWh). HEP expects that the electricity demand in Croatia will rise by an average of 3.8 percent a year over the next few years mainly due to re-electrification, new construction and increased demand from new technology. Government officials have cautioned that Croatia will need to depend on more and more imported electricity if new sources aren't developed, especially in case of unfavorable hydrological conditions.

¶3. HEP currently owns 25 hydro power plants and seven thermal power plants fired with coal, fuel oil and gas. HEP is half owner with Slovenia of the nuclear power plant Krsko, located in Slovenia. The company also shares ownership with German partner RWE of a coal-fired plant, located in Plomin, Croatia. Outside of Croatia, HEP owns the Busko Blato water pumping station in Bosnia, which supplies water to local hydro plants. HEP will also continue receiving electricity from two Bosnian thermal power plants in the next few years in exchange for investments made in the company when Croatia was part of the former Yugoslavia.

¶4. Of all power generated in Croatia, 46.6 percent (7.001 Gigawatts per hour (GWh)) comes from hydro power plants; 27.1 percent (4.069 GWh) from thermal plants; 8.8 percent (1.320 GWh) from the thermal coal plant in Plomin; and 17.3 percent (2.606 GWh) from the nuclear plant in Krsko, Slovenia, which Croatia and Slovenia own and operate jointly.

¶5. An official from Hrvoje Pozar Institute, which conducts GoC-commissioned studies, said the GoC is looking into development of small hydro-electric plants as they satisfy the EU criteria for renewable energy while the larger existing plants do not. Environmentalists and GoC officials both said Croatia has great potential for developing sources of renewable energy including power from wind, sun and biomass. But little has been accomplished so far. Environmental Minister Dropolic has halted new construction of windmills along the coast. According to some sources, she has claimed the windmills are an eyesore, a hazard to birds and cause excessive noise. However, HEP officials said the electric company had commissioned Hrvoje Pozar to conduct a study on the feasibility

and environmental impact of wind power plants, as well as possible sources of investment for this type of energy. The European Wind Integration Study is slated to be released by the end of the year. He said now there is investor interest in wind energy in Croatia, but no prospects for new projects. He expects new legislation on renewables to pave the way for development and investment.

CROATIAN ENERGY REGULATORY COUNCIL (CERA)

¶6. In 1998 the Croatian Parliament (assisted by USAID) approved an energy development strategy, which was the basis for the energy law packages adopted in 2001 and 2004. The laws require the unbundling of HEP into daughter companies for generation, transmission, distribution and supply, with an independent market operator. In 2003, the market was opened for customers with yearly energy consumption higher than 40 GWh, later lowered to 16 GWh. Currently there are 120 customers who can choose their electricity supplier. However, a HEP official said 95 percent of the energy supplied to customers in Croatia still comes from HEP. This is partly due to an opaque tariff system, currently under restructuring, also with USAID assistance. EU regulations require HEP to be restructured by 2015. HEP's CEO, speaking at the energy conference, said the restructuring process is likely to be completed in 2008.

¶7. At the same time the energy regulatory laws were accepted, the Parliament also imposed a moratorium on construction of nuclear plants in Croatia through 2015. However, many now believe Croatia should revisit this policy, as future electricity demands will require more nuclear energy. Nuclear advocates point out that the Krsko plant has proven that nuclear energy comes with very little environmental impact, but caution against getting ahead of public opinion on the issue.

NETWORKS, GRIDS, CONNECTIONS AND WIRES

¶8. After 12 years of operating in isolation, the Union for Coordination of Transmission of Electricity (UCTE)'s region I and II were reconnected in October 2004. This act reconnected Croatia and Southeastern Europe to Western Europe with a 400 kV line. The UCTE is composed of 34 members (transmission systems operators or TSOs) in 23 European countries and three North African countries.

¶9. The connection was disrupted in 1991 during the war in Croatia when the substation Ernestinovo was destroyed. The reconnection followed the completion of construction and start up of the 400/220/110 kV Zerjavinec and 400/110 kV Ernestinovo substations and the start up of the 400 kV line Konjsko-Mostar (BH) earlier that year. HEP invested 115 million euro ($144 million) in the project. Currently there are two 400 kV connection points and five 220kV connection points in Croatia. The reconnection became an important part of the Southeastern European electricity network to supply demands in the newly liberalized market.

¶10. On Oct. 17 HEP officials signed an agreement to connect via submarine cable from Italy to Croatia. The power exchange would not only connect Italy to Southeastern Europe, but also allow the Croatian system to be used in the transit of power to Italy. According to studies, Croatia's power grids can support continuous 500 MW transit to Italy without operational or security difficulties. An Italian official said, as Italy outgrows its energy supply, it is looking for new, more stable sources of electricity than what is currently available from its European neighbors. HEP officials also signed another new agreement to invest in a link from Ernestino to a 400 kV grid in Pec, Hungary.

MORE HEP ACTIVITIES

¶11. HEP plans to invest $1.8 billion over the next 10 years to build five power plants. The company is aiming to raise its generating capacity by more than 25 percent to meet growing domestic demand and prepare for liberalization of the market, according to a top company official. The plan is to increase capacity by 1,220 MW from hydro and thermal power plants. Current capacity is 4,000 MW; the 25 percent increase would cover current domestic market needs and

projected increase. The construction would be financed through long-term loans, the company's own capital and, if necessary, through joint ventures with other Croatian companies.

¶12. HEP has already started construction of two power plants - a hydro power plant in Lesce, and a thermo power plant, Te-To Zagreb. HEP is also applying for a permit for a third Plomin coal-fired plant, but is facing opposition from environmentalists. This year, the company will decide whether to build two new gas-fired power plants of 250 MW each in Sisak and Osijek.

¶13. Last year, HEP set up an office in the Bosnian town of Mostar and plans to expand its business in the neighboring country. HEP has applied to participate with Elektroprivreda Herceg Bosna in the construction of a 40 MW power plant and has plans to participate in the privatization of other companies in Bosnia, according to the HEP CEO.

HARMONIZING WITH THE ENVIRONMENT

¶14. There is broad agreement among both government and industry that the time has come for Croatia to start an energy conservation campaign. The public must be educated to conserve all kinds of energy, including electricity, gas and other fuels. The energy conservation program should include education in schools, advertising campaigns and should target citizens, companies and especially builders to make houses and new buildings more energy efficient. One NGO representative said the amount of fuel used in production and transport of energy in Croatia is ironically also driving the increasing demand for energy. "If people would conserve energy," he said, "there would be no need to build more power plants in Croatia."
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